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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,661	03/06/2002	Dan A. Preston	44375/4:10	1343

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EXAMINER	
MEHRA, INDER P	

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/092,661	PRESTON ET AL.	
	Examiner	Art Unit	
	Inder P. Mehra	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/4;9/16;9/18*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to instant application no. 10/092661 dated: 3/6/02.

Specification

2. The disclosure is objected to because of the following informalities:

Refer to page 1 lines 13-15, Provisional Application Nos. 60/047,034 filed on May 19, 1997; 60/047, 140 filed on May 20, 1997; 60/048,369 filed on June 3, 1997; 60/048,385 filed on June 3, 1997; and 60/055,497 filed on August 12, 1997. mentioned in "Preliminary Amendment, is not mentioned in specification.

Priority

3. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. [1] as follows:

Claims, which are supported by individual priority applications be identified with reference to the individual applications.

Appropriate correction/clarifications are required.

Information Disclosure Statement

4. The information disclosure statement filed 9/4/02 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because "Foreign Patent Documents" and "other documents" have not been provided. Therefore, these documents have not been considered.. It has been placed in the application file, but the information referred to therein has not been

considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

5. IDS's dated 9/16/05 and 9/18/02 have been considered.

Double Patenting

6. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

7. Claims 1-41 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-41 of copending Application No. 10/ 095,866dated: 3/11/02. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

For claims 1-41, US Patent Application Publication no. 2002/0093990, (10/095,866) discloses:

An inband signaling modem for communicating digital data over a voice chnnnel of a telecommunications network comprising:

an input for receiving digital data;

an encoder for converting the digital data into audible tones that synthesize frequency characteristics of human speech and prevent voice encoding circuitry in the telecommunications network from corrupting the digital data represented by the synthesized audio tones; and

an output for outputting the synthesized audio tones to a voice channel of a digital wireless telecommunications network (see claim 1).

An inband modem according to claim 1 wherein the synthesized tones are transmitted to avoid interference with actual voice signals transmitted over the same voice channel (see claim 2).

An inband modem according to claim 1 wherein the encoder includes:
a packet formatter for formatting the digital data into inband signaling packets; and

a modulator for converting bits in the inband signaling packets into the synthesized tones(see claim 3).

An inband modem according to claim 3, wherein the packet formatter appends a preamble of bits to the digital data for sacrificing to any encoding circuitry that corrupts initial tones in the inband signaling packet (see claim 4).

An inband modem according to claim 4 wherein the packet formatter appends a postamble of bits to the ends of the inband signaling packets for sacrificing to any encoding circuitry that corrupts the synthesized tones (see claim 5).

An inband modem according to claim 3 wherein the packet formatter appends a sequence of bits at the fronts of the inband signaling packets that precondition the encoding circuitry by simulating generally the sequence of synthesized tones representing the digital data (see claim 6).

An inband modem according to claim 1 wherein the encoder converts binary " 1" bits in the digital data to a first tone having a first frequency within a human voice range and converts binary "0" bits in the digital data to a second tone having a second frequency within the human voice range (see claim 7).

An inband modem according to claim 7 wherein the first and second frequency are both between 400 and 1000 Hertz (see claim 8).

All inband modem according to claim 1 where the encoder generates samples of the digital data at about 8000 samples per second and outputs the encoded audio tones representing the bits of the digital data at a rate of about 100 bits per second (see claim 9).

An inband modem according to claim 9 wherein the sequence of first and second frequencies as a continuous signal with from 5 to 15 millisecond.s time periods for each binary bit in the digital data (see claim 10).

An inband modem according to claim 9 wherein the amplitude of the first and second frequencies are about 25 millivolts (see claim11).

An inband modem according to claim 1 wherein the encoder is located in a battery pack detachably coupled to a cellular telephone (see claim 12).

An inband modem according to claim 12 including a digital to analog converter located in the battery back that is coupled to the encoder and that outputs analog signals representing the synthesized tones to tie cellular telephone (see claim 13).

An inband modem according to claim 13 wherein the analog signals are fed into a same analog to digital converter in the cell phone that processes human voice signals (see claim 14).

An inband modem according to claim 1 wherein the encoder is implemented as software in a cellular telephone processor that also operates as a voice coder (see claim 15).

An inband modem according to claim 1 including a decoder for

decoding the synthesized tones transmitted over the voice channel of the telecommunications network (see claim 16).

An inband modem according to claim 16 wherein the decoder includes:

a first inband filter for detecting signals outside of a synthesized tone frequency band;

a second out of band filter for detecting signals inside the synthesized tone frequency band; and

a comparator that compares the signals detected outside the synthesized tone frequency band with the signals detected inside the synthesized tone frequency band and identifies signals as synthesized tones when the compared value is greater than a selected value (see claim 17).

A modem according to claim 17 wherein the decoder includes an active state that correlates detected synthesized tones with a first audio tone representing a binary "1"' value and a second audio tone representing a binary "0" value (see claim 18).

A modem according to claim 16 wherein the decoder synchronizes decoding of the synthesized tones by shifting samples of the simulated tones until a maximum power ratio is detected for a digital synchronization pattern transmitted with in the simulated voice data (see claim 19).

A cellular telephone, comprising:

an audio microphone for converting voice signals into electrical voice signals;

an analog to digital converter for converting the electrical voice signals into digital voice semples;

a voice coder for converting tlle digitai voice samples into encoded digital voice signals;

a transceiver that transmits the encoded digital voice signals over a digital voice channel of a wireless communications network; and

an inband signaiing modem that converts a digital bit stream into synthesized tones and outputs the synthesized tones to the voice coder, the voice coder encoding the synthesized tone in the same manner as the electrical voice signals before being transmitted over the digital voice channel (see claim 20).

A cellular telephone according to claim 20 including a digital to analog converter coupled between the inband signaling modem and the analog to digital concerter (see claim 21).

A cellular telephone according to claim 21 wherein the inband signaling modem and the digital to analog converter are located in a device detachably coupled to the cellular telephone (see claim 22).

A cellular telephone according to claim 20 including a packet formatter

that converts the digital bit stream into inband signaling packets that include sacrifice bits that can be corrupted without losing any of the content of the digital bit stream (see claim 23).

A cellular telephone according to claim 23 wherein the sacrifice bits are located at the beginning and at the end of the inband signaling packet (see claim 24).

A cellular telephone according to claim 23 wherein the packet formatter attaches a sequence of preconditioning bits to the inband signaling packets that enable the voice coder to adapt to the frequencies, bit rate and sequence of synthesized tones that represent the digital bit stream (see claim 25).

A cellular telephone according to claim 25 wherein the preconditioning bits are a random sequence of " 1'. and "0" binary bits (see claim 26).

A cellular telephone according to claim 20 including a decoder (16) coupled to the voice coder for detecting and decoding synthesized tones received over the digital voice channel (see claim 27).

A cellular telephone according to claim 27 wherein the decoder includes:

a first inband filter for filtering signals outside of a synthesized tone frequency

band;

a second out of band filter for filtering signals inside the synthesized tone frequency band; and

a comparator that compares the signals outside the synthesized tone frequency band with the signals inside the synthesized audio tone frequency band and identifies signals as synthesized tones when the compared value is greater than a selected value (see claim 28).

A cellular telephone according to claim 28 wherein the decoder includes:

an active state that correlates detected synthesized tones with a first transform representing a binary "1" value and a second transform representing a binary "0" value;

a clock recovery state that synchronizes the decoder to the synthesized tones by first shifting samples of the synthesized tones until a maximum power ratio is detected in a digital synchronization pattern in the simulated voice data;

and a demodulation state where synthesized audio tones are demodulated back into digital data (see claim 29).

A cellular telephone according to claim 20 wherein the synthesized tones are generated at a first audible frequency to represent binary "1 " values and at a second audible frequency to represent binary "0" values, the first and second

frequencies being about 100 Hertz apart, each extending for a duration of about 10 milliseconds and generated as one continuous signal (see claim 30).

An inband signaling modem for communicating digital data over a digital voice channel of a wireless communications network, comprising:

an input that receives voice signals over the voice channel of the wireless communications network;

a filter that detects synthesized tones representing the digital data and is interleaved with the voice signals transmitted over the digital voice channel, the synthesized tones synthesizing frequency characteristics of human speech and preventing voice encoding circuitry in the wireless telecommunications network from corrupting the digital data represented by the synthesized audio tones; and

a demodulator that converts tile detected synthesized tones back into the represented digital data (see claim 31).

An inband modem according to claim 31 wherein the filter includes:

a first inband filter for detecting signals outside of a synthesized tone frequency band;

a second out of band filter for detecting signals inside the synthesized tone frequency band; and

a comparator that compares tile signals detected outside the synthesized tone frequency band with the signals detected inside the synthesized tone frequency band

and identifies signals as synthesized tones when the compared value is greater than a selected value (see claim 32).

A modem according to claim 32 wherein tlle demodulator decoder includes an active state that correlates detected synthesized tones with a first audio. tone representing a binary " 1.' value and a second audio tone representing a binary "0" value (see claim 33).

A modem according to claim 33 wherein the demodulator synchronizes decoding of the synthesized tones by shifting samples of the simulated tones until a maximum power ratio is detected for a digital synchronization pattern transmitted with in the simulated voice data (see claim 34).

A modem according to claim 34 wherein the modem includes an analog to digital converter for receiving signals from an digital to analog converter in a cellular telephone (see claim35).

A modem according to claim 35 including an encoder for converting the digital bit stream into synthesized tones and outputting the synthesized tones to a voice coder in the cellular telephone (see claim 36).

Software code for communicating digital data over a voice charmel of a

digital wireless telecommunications network comprising:

code for forming the digital data into a packet payload in an inband signaling packet;

code for attaching preconditioning bits to the inband signaling packet iat prevent circuitry in the wireless telecommunications network from corrupting the digital data;

code for converting the bits in the inband signaling packet into a series of voice frequencies that simulate characteristics of human speech; and code for converting the simulated voice frequencies into encoded data transmitted over the digital voice channel of a wireless telecommunications network (see claim 37).

Software code according to claim 37 including code for generating a sequence of bits in a preamble of the inband signaling packet that preview tlle sequence of bits in the packet payload (see claim 38).

Software according to claim 37 including code that converts the synthesized voice frequencies into analog signals before sending the synthesized voice signals to a voice coder for transmission over the wire telecommunications network (see claim 39).

A method for communicating digital data over the voice channel of a digital wireless telecommunications network comprising:

receiving a digital bit stream ;

encoding the digital bit stream into a continuous audio signal having different frequency tones for different bit values;

selecting the frequency tones to represent speech signals that will pass through a voice coder without being corrupted;

encoding the audio signal into encoded values with a voice coder for transmitting over the digital wireless telecommunications network; and

transmitting the encoded values over the digital wireless telecommunications network (see claim 40).

A method according to claim 40 including:

segmenting the digital bitstream into packet payloads in inband signaling packets; and

attaching preconditioning bits to the inband signaling packets that prevent circuitry in thee digital wireless telecommunications network from corrupting the bits from the digital bit stream. (see claim 41).

Prior Art of Record

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Menon (US Patent No. 6,526,026) discloses a communication system having a wireless trunk for connecting multiple phone lines over wireless communication link to a cellular network.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Inder P. Mehra whose telephone number is 571-272-3170. The examiner can normally be reached on Monday through Friday from 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Inder Pal Mehra

Inder P Mehra 10/30/05
Examiner
Art Unit 2666

SEEMA RAO
SUPERVISORY PATENT EXAMINER